

KONERU LAKSHMAIAH EDUCATIONAL FOUNDATION

INDUSTRIAL VISIT REPORT

Indian Institute of Oil palm Research
Pedavegi, Eluru District, Andhra Pradesh, India

<https://iopr.icar.gov.in/>



An Industrial visit to **Indian Institute of Oil palm Research (IOPR)**, Pedavegi was organized by the Biotechnology Department of KLEF on Saturday, 8th Sep 2019. Students and four faculties visited to the palm oil factory at 12.30 pm. First, we visited the factory and then visited the research institute IOPR where the research is carried out. The purpose of the visit is to know the processes of extraction of oil from palm and to know how the research is carried to produce HYV of palm.

We interacted with the industrialist who is controlling the factory operations. He gave a detailed explanation about how the process of extraction is done in chronological order. We came to know the equipment used and the methodology of extraction. The equipment used by the factory include digesters, clarifiers, roll mills and sterilization equipment. Firstly, the palm was loaded into large containers as shown. These containers have the capacity of 10 tons.



These loaded containers are subjected to sterilization (moist heat) at 5kg pressure. This is done to decontaminate the palm fruits and loosen them as steam passes into them, so that it could be easy to separate the seed from the fruit. Here they use the mesocarp of the fruit is used for the production of oil not the seed.



These sterilised palms were sent into the roll mills which separates the fruits from the stem or branches, and other dust like leaves etc which are not necessary. Then the separated fruits are sent into the digesters. In the digesters the fruits are digested so that the fibrous material and seeds are separated out and the digested fruit mesocarp comes as watery substance which is a mixture of oil, water and sludge. This watery substance is sent into clarifiers. Clarifiers are maintained at 90°c which makes the oil to float on water as top layer, water and sludge and other solid materials are deposited down the clarifier. This oil is then extracted out. The left-over sludge and water are sent to effluent treatment plant for further extraction. The fibrous material obtained after digestion are used for boilers for fire and the seeds are exported to other

industries which produce oil from seeds and that particular unit is not present in this factory. Thus we have learnt about the process of palm oil extraction.

Our next visit was to the research institute IOPR where research is carried out to produce palm trees of high yield. There we came across different labs, labs of plant pathology, molecular biology, microbiology, biochemistry. There we learnt how the research process is carried out by using equipment like PCR, agarose gel electrophoresis, gel doc, centrifuges.

Tenera is the hybrid of palm used for palm oil extraction. Tenera is the hybrid which is obtained by cross between **dura** and **pisifera**. As oil is extracted from mesocarp we need the fruit with more mesocarp, no seed shell and small seed.